PB-240 315

ASPINOOK POND, NEW LONDON AND WINDHAM COUNTIES, CONNECTICUT

Pacific Northwest Environmental Research Laboratory

Prepared for:

National Environmental Research Center
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Connecticut National Guard

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16. ABSTRACT
Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivded according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

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REPORT
ON
ASPINOOK POND
NEW LONDON AND WINDHAM COUNTIES
CONNECTICUT

EPA REGION I

WORKING PAPER No. 176

WITH THE COOPERATION OF THE

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

AND THE

CONNECTICUT NATIONAL GUARD

JANUARY, 1975

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nation-wide threat of accelerated eutrophication to fresh water lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the Connecticut Department of Environmental Protection for professional involvement and to the Connecticut National Guard for conducting the tributary sampling phase of the Survey.

John J. Curry, Director of the former Water Resources Commission; Roy B. Anderson, Principal Sanitary Engineer, and Steven Gerdsmeier, Sanitary Engineer, of the Water Compliance Unit, Department of Environmental Protection; and Sam Suffern, Assistant Director of Water and Related Resources, Department of Environmental Protection, provided invaluable lake documentation and counsel during the course of the Survey.

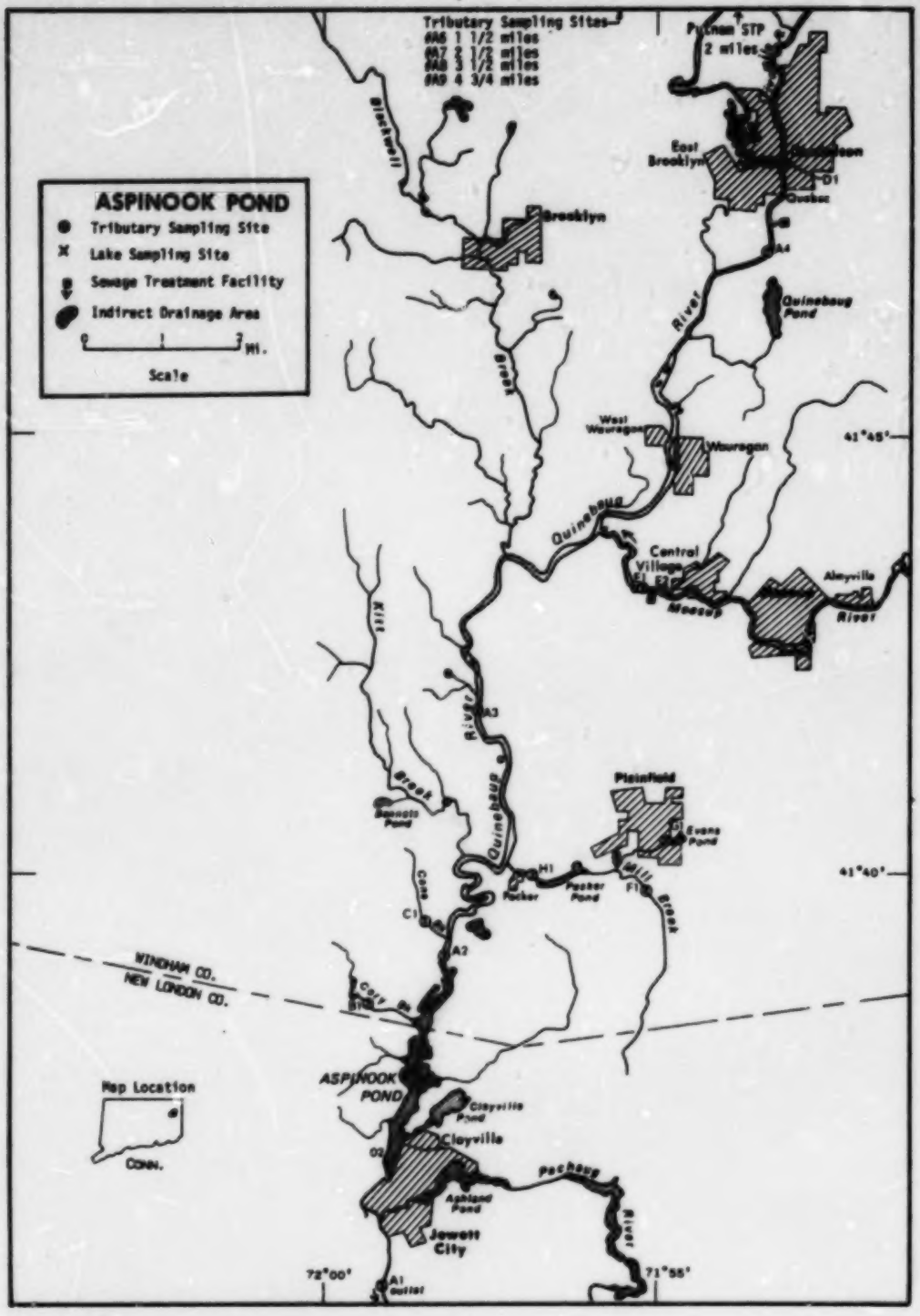
Major General John F. Freund, the Adjutant General of Connecticut, and Project Officer Lieutenant Colonel Daniel M. McGuire, who directed the volunteer efforts of the Connecticut National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF CONNECTICUT

LAKE NAME	COUNTY
Aspinook Pond	New London, Windham
Bantam	Litchfield
Community	New Haven
Eagleville	Tolland
Hanover Pond	New Haven
Housatonic Impoundments:	
Housatonic	Fairfield, New Haven
Lillinonah	Fairfield, Litchfield, New Haven
Zoar	Fairfield, New Haven


ASPINOOK POND
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Indirect Drainage Area
0 1 2 Mi.
Scale
Tributary Sampling Sites
#A6 1 1/2 miles
#A7 2 1/2 miles
#A8 3 1/2 miles
#A9 4 3/4 miles
Putnam STP
2 miles
Blackwell
Brooklyn
East Brooklyn
Quebec
Quinebaug River
Quinebaug Pond
West Wauregan
Wauregan
41°45'
Central Village
Moosup
Almyville
River
Plainfield
Packer Pond
Willi Brook
41°40'
WINDHAM CO.
NEW LONDON CO.
Map Location
CONN.
ASPINOOK POND
Clayville Pond
Clayville
Pachaug River
Ashland Pond
Jewett City
72°00'
71°55'
A1 outlet

ASPINOOK POND

STORET NO. 0901

I. CONCLUSIONS

A. Trophic Condition:

Aspinook Pond is a eutrophic impoundment characterized by heavy growths of rooted aquatic vegetation, high turbidity, and high nutrient levels.

B. Rate-Limiting Nutrient:

Algal assay results indicate that Aspinook Pond was nitrogen limited at the time the sample was collected. The pond data indicate nitrogen limitation at the other sampling times as well.

C. Nutrient Controllability:

1. Point sources--During the sampling year, Aspinook Pond received a total phosphorus load at a rate more than 18 times the rate proposed by Vollenweider (in press) as "dangerous"; i.e., a eutrophic rate (see page 14). While Vollenweider's model may not be applicable to water bodies with very short hydraulic retention times, it is apparent that Aspinook Pond receives excessive nutrient loads.

It is calculated that the three point sources considered in this study contributed only 21% of the total phosphorus load. Even complete removal of phosphorus at these sources would still leave a phosphorus loading rate in excess of 14 times the eutrophic rate,

and it is concluded that it will be necessary to institute drainage-wide point-source phosphorus control to appreciably improve the trophic condition of Aspinook Pond.

The interstate French River joins the Quinebaug River in Thompson Township; industrial and municipal discharges to the French River, including Massachusetts sources, appear to have been significant contributors of nutrients to the system (Anonymous, 1972A).

Also, it is evident that there were point sources contributing phosphorus to the Quinebaug River above the confluence of the French River and beyond the 25-mile limit of the Survey*. Note that the mean total phosphorus concentration at station A-9--about 22 stream miles above the inlet to the Pond--was 0.232 mg/l, or nearly twice the mean concentration at inlet station A-2 (0.133 mg/l).

Cooperative interstate control of point-source phosphorus inputs to the Quinebaug River-French River system should result in some improvement in the trophic condition of Aspinook Pond. However, to accomplish a significant improvement, it appears that a high degree of phosphorus removal at the point sources will be necessary because of the extensive drainage basin of the Pond (see below).

2. Non-point sources (see page 14)--During the sampling year, the phosphorus export of the Quinebaug River was more than twice

* See Working Paper No. 1, "Survey Methods".

that of Cone Brook and more than four times the export of Cory Brook. This high export rate is indicative of the unmeasured point sources outside the Survey limits.

The very high drainage area to pond area ratio of 1,430 to 1 necessitates the high degree of point-source control of phosphorus discussed above. Note that with no point-source impact, non-point phosphorus contributions of only 22 lbs/mi^2/yr (about 1/4 of the Cory Brook export) would result in a eutrophic loading rate.

II. INTRODUCTION

Aspinook Pond is an impoundment of the Quinebaug River extending north-south through the townships of Lisbon, Griswold, and Canterbury. Shoreline development is minimal, and the shores are largely wooded. The Quinebaug River represents the only significant flow into the pond. Several small brooks make minor contributions.

The water level of the pond fluctuates considerably as a result of industrial draw-down. There is limited recreational use, largely fishing, and the pond has been stocked with yellow perch, bullheads, golden shiners, and bluegill sunfish (Anonymous, 1959). Full realization of the recreational potential of the pond has been hampered by limited access and heavy algal blooms.

Mud, sand, and gravel bottom constituents are largely covered by a muck layer comprising much of the recent sediments. Contributions to the muck layer come from the abundant submerged and emergent vegetation as well as the algal crops produced within the pond.

III. LAKE AND DRAINAGE BASIN CHARACTERISTICS

A. Lake Morphometry†:

1. Surface area: 333 acres.
2. Mean depth: 8.7 feet.
3. Maximum depth: 27 feet.
4. Volume: 2,897 acre-feet.
5. Mean hydraulic retention time: 28 hours.

B. Tributary and Outlet:
(See Appendix A for flow data)

1. Tributaries -

Name	Drainage area*	Mean flow*
Quinebaug River	635.0 mi^2	1,114.1 cfs
Cory Brook	7.5 mi^2	13.6 cfs
Cone Brook	1.2 mi^2	2.3 cfs
Minor tributaries & immediate drainage -	70.8 mi^2	123.2 cfs
Totals	714.5 mi^2	1,253.2 cfs

2. Outlet -

Quinebaug River	715.0 mi^2**	1,253.2 cfs

C. Precipitation***:

1. Year of sampling: 66.1 inches.
2. Mean annual: 46.4 inches.

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† Anonymous, 1972B.
* Drainage areas are accurate within ±1%; gaged mean daily and mean monthly flows are accurate within ±10%; ungaged mean daily and mean monthly flows are accurate within ±20%; and normalized mean monthly flows are accurate within ±10% for gaged streams and within ±12% (high flow) to ±27% (low flow) for ungaged streams.
** Includes area of pond.
*** See Working Paper No. 1.

IV. LAKE WATER QUALITY SUMMARY

Aspinook Pond was sampled four times during the open-water season of 1972 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from one or more depths at one station on the pond (a second station was sampled once in August; see map, page v). During each visit, a single depth-integrated (near bottom to surface) sample was collected for phytoplankton identification and enumeration, and a similar sample was taken for chlorophyll *a* analysis. During the last visit a five-gallon depth-integrated sample was collected for algal assays. The maximum depths sampled were 12 feet at station 1 and 14 feet at station 2.

The results obtained are presented in full in Appendix B, and the data for the fall sampling period, when the pond essentially was well-mixed, are summarized below. Note, however, the Secchi disc summary is based on all values.

For differences in the various parameters at the other sampling times, refer to Appendix B.

A. Physical and chemical characteristics:

Parameter	Minimum	Mean	Median	Minimum
		FALL VALUES (10/06 & 08/72)		
Temperature (Cent.)	15.2	15.7	16.0	16.0
Dissolved oxygen (mg/l)	9.0	10.5	9.4	13.0
Conductivity (μmhos)	120	147	153	160
pH (units)	7.0	7.8	7.7	8.7
Alkalinity (mg/l)	16	16	16	16
Total P (mg/l)	0.121	0.121	0.121	0.121
Dissolved P (mg/l)	0.080	0.080	0.080	0.080
NO_2 + NO_3 (mg/l)	0.430	0.430	0.430	0.430
Ammonia (mg/l)	0.160	0.160	0.160	0.160
		ALL VALUES		
Secchi disc (inches)	12	31	30	48

B. Biological characteristics:

1. Phytoplankton* -

Sampling Date	Dominant Genera	Number per ml
08/04/72	1. Cyclotella	1,486
	2. Anabaena	1,159
	3. Dinobryon	1,014
	4. Melosira	761
	5. Nitzschia	652
	Other genera	3,370
	Total	8,442
10/06/72	1. Cyclotella	1,133
	2. Scenedesmus	530
	3. Dictosphaerium	506
	4. Flagellates	307
	5. Ankistrodesmus	157
	Other genera	1,050
	Total	3,683

* The May sample was lost in shipment.

2. Chlorophyll a -
(Because of instrumentation problems during the 1972 sampling, the following values may be in error by plus or minus 20 percent.)

Sampling Date	Station Number	Chlorophyll a (µg/l)
05/29/72	01	13.9
08/04/72	01	62.3
	02	41.2
10/06/72	01	40.3
10/08/72	01	21.4

C. Limiting Nutrient Study:

1. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.050	0.495	13.6
0.006 P	0.056	0.495	14.5
0.012 P	0.062	0.495	13.6
0.024 P	0.074	0.495	13.5
0.060 P	0.110	0.495	14.5
0.060 P + 10.0 N	0.110	10.495	63.7
10.0 N	0.050	10.495	28.4

2. Discussion -

The control yield of the assay alga, Selenastrum capricornutum, indicates that the potential primary productivity of Aspinook Pond was high at the time the sample was taken. Also, the lack of yield response to successive increments of orthophosphorus, until nitrogen was also added, shows the Pond was nitrogen limited (note the marked increase in yield when only nitrogen was added).

The pond data indicate nitrogen limitation at the other sampling times as well; the N/P ratios were about 9/1, and nitrogen limitation would be expected.

V. NUTRIENT LOADINGS
(See Appendix C for all data)

For the determination of nutrient loadings, the Connecticut National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the map (page v), except for the high runoff months of March and April when two samples were collected. Sampling was begun in August, 1972, and was completed in October, 1973.

Through an interagency agreement, stream flows estimates for the year of sampling and a "normalized" or average year were provided by the Connecticut District Office of the U.S. Geological Survey for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of a U.S.G.S. computer program for calculating stream loadings*. Nutrient loads for "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated by using the means of the nutrient loads, in lbs/mi^2/year, in Cory Brook at station B-1 and multiplying the means by the ZZ area in mi^2.

The discharges of the Danielson, Plainfield Village, Plainfield North, and Putnam wastewater treatment plants were sampled by the operators on a monthly basis, and flow data were provided. The loadings shown for the Quinebaug River are those measured at station A-2 minus the point-source loads.

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* See Working Paper No. 1.

A. Waste Sources:

1. Known municipal* -

Name	Pop. Served	Treatment	Mean Flow (mgd)	Receiving Water
Danielson	5,000	prim. clarifier	0.685	Quinebaug River
Plainfield Village	1,500	act. sludge + sand filters	0.338	Mill Brook
Plainfield North	2,500	act. sludge	0.390	Moosup River
Putnam	7,000	act. sludge	1.825	Quinebaug River

2. Known industrial - None within Survey limits**.

* Armet, 1973.
** See Working Paper No. 1.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	lbs P/ yr	% of total
a. Tributaries (non-point load) -		
Quinebaug River	228,630	77.5
Cory Brook	640	0.2
Cone Brook	190	<0.1
b. Minor tributaries & immediate drainage (non-point load) -	6,020	2.0
c. Known municipal -		
Danielson	16,110	5.5
Plainfield Village	4,680	1.6
Plainfield North	9,470	3.2
Putnam	32,050	10.9
d. Septic tanks* -	30	<0.1
e. Known industrial - None	-	-
f. Direct precipitation** -	50	<0.1
Total	294,670	100.0

2. Outputs -

Lake outlet - Quinebaug River 277,670

3. Net annual P accumulation - 17,200 pounds

* Estimated 50 lakeshore residences; see Working Paper No. 1.
** See Working Paper No. 1.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	lbs N/ yr	% of total
a. Tributaries (non-point load) -		
Quinebaug River	3,321,180	85.6
Cory Brook	35,790	0.9
Cone Brook	5,190	0.1
b. Minor tributaries & immediate drainage (non-point load) -	337,860	8.7
c. Known municipal -		
Danielson	50,140	1.3
Plainfield Village	13,270	0.3
Plainfield North	25,430	0.7
Putnam	88,080	2.3
d. Septic tanks* -	1,180	<0.1
e. Known industrial - None	-	-
f. Direct precipitation** -	3,210	0.1
Total	3,881,330	100.0

2. Outputs -

Lake outlet - Quinebaug River 3,550,920

3. Net annual N accumulation - 330,410 pounds

* Estimated 50 lakeshore residences; see Working Paper No. 1.
** See Working Paper No. 1.

D. Mean Annual Non-point Nutrient Export by Subdrainage Area:

Tributary	lbs $P/mi^2/yr$	lbs $N/mi^2/yr$
Quinebaug River	360	5,230
Cory Brook	85	4,772
Cone Brook	158	4,325

E. Yearly Loading Rates:

In the following table, the existing phosphorus loading rates are compared to those proposed by Vollenweider (in press). Essentially, his "dangerous" rate is the rate at which the receiving water would become eutrophic or remain eutrophic; his "permissible" rate is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic rate would be considered one between "dangerous" and "permissible".

Note that Vollenweider's model may not be applicable to water bodies with very short detention times.

Units	Total Phosphorus		Total Nitrogen	
	Total	Accumulated	Total	Accumulated
lbs/acre/yr	885.5	51.7	11,655.6	992.2
$grams/m^2/yr$	99.25	5.79	1,306.4	111.2

Vollenweider loading rates for phosphorus ($g/m^2/yr$) based on mean depth and mean hydraulic retention time of Aspinook Pond:

"Dangerous" (eutrophic rate)	5.40
"Permissible" (oligotrophic rate)	2.70

VI. LITERATURE REVIEWED

Anonymous, 1959. A fishery survey of the lakes and ponds of Connecticut. Report No. 1, CT Bd. of Fish. & Game, Hartford.

Anonymous, 1972A. French and Quinebaug River - Water quality data, Part A. MA Water Res. Comm., Boston.

Anonymous, 1972B. Survey questionnaire. CT Dept. of Env. Prot., Hartford.

Armat, Brian W., 1973. Wastewater treatment plant questionnaires. CT Dept. of Env. Prot., Hartford.

Vollenweider, Richard A. (in press). Input-output models. Schweiz. Z. Hydrol.

VII. APPENDICES

APPENDIX A

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR CONNECTICUT 11/26/74

LAKE CODE 0901 ASPINOOK POND

TOTAL DRAINAGE AREA OF LAKE 715.00

TRIBUTARY	SUB-DRAINAGE AREA	NORMALIZED FLOWS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
0901A1	715.00	1467.00	1491.00	2549.00	2381.00	1496.00	949.20	628.00	557.50	626.80	598.00	997.00	1319.00	1253.20
0901A2	635.00	1301.00	1317.00	2260.00	2099.00	1329.00	873.00	574.00	499.00	567.00	528.00	870.00	1170.00	1114.07
0901B1	7.47	16.30	16.00	29.00	27.00	16.00	7.20	4.00	5.50	4.80	7.00	14.00	15.00	13.59
0901C1	1.18	2.70	3.00	5.00	4.30	2.50	1.20	0.52	0.86	0.67	1.20	2.50	2.70	2.26
090122	71.00	150.00	156.00	260.00	255.00	151.00	69.00	50.00	53.00	55.00	63.00	113.00	134.00	125.53

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 715.00
SUM OF SUB-DRAINAGE AREAS = 716.65

TOTAL FLOW IN = 15086.64
TOTAL FLOW OUT = 15059.50

NOTE *** USGS DOES NOT CONSIDER C1 A TRIB THUS, THE DIFFERENCE IN AREAS & FLOWS

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
0901A1	9	72	515.00	19	472.00				
	9	72	558.00	23	730.00				
	10	72	705.00	14	980.00				
	11	72	2810.00	4	800.00				
	12	72	4120.00	2	3770.00				
	1	73	2640.00	6	2300.00				
	2	73	4005.00	10	3520.00				
	3	73	2700.00	10	2890.00	31	1530.00		
	4	73	2760.00	1	1590.00	14	2780.00	28	3470.00
	5	73	1830.00	20	1420.00				
	6	73	920.00	30	1800.00				
	7	73	1030.00	18	680.00	28	486.00		
	8	73	573.00	25	394.00	26	362.00		
	9	73	537.00	22	575.00				
	10	73	440.00	6	506.00				
0901A2	8	72	461.00	19	422.00				
	9	72	505.00	23	660.00				
	10	72	623.00	14	796.00				
	11	72	2457.00	4	698.00				
	12	72	3655.00	2	3344.00				
	1	73	2341.00	6	2039.00				
	2	73	3561.00	10	3130.00				
	3	73	2401.00	10	2564.00	31	1360.00		
	4	73	2454.00	14	2485.00	28	3085.00		
	5	73	1627.00	20	1263.00				
	6	73	816.00	30	1600.00				
	7	73	914.00	18	604.00	28	431.00		
	8	73	509.00	25	350.00	26	321.00		
	9	73	476.00	22	510.00				
	10	73	390.00	6	449.00				

TRIBUTARY FLOW INFORMATION FOR CONNECTICUT 11/26/74

LAKE CODE 0901 ASPINOOK POND

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
090181	8	72	5.10	19	4.70				
	9	72	4.30	23	5.60				
	10	72	8.30	14	10.00				
	11	72	39.00	4	11.00				
	12	72	47.00	2	43.00				
	1	73	29.00	6	25.00				
	2	73	44.00	10	38.00				
	3	73	29.00	10	32.00	31	17.00		
	4	73	30.00	14	17.00	28	38.00		
	5	73	26.00	20	15.00				
	6	73	9.60	30	19.00				
	7	73	11.00	18	7.10	28	5.10		
	8	73	6.80	25	4.10	26	3.80		
	9	73	5.60	22	6.00				
	10	73	4.60	6	5.30				
0901C1	8	72	0.79	19	0.73				
	9	72	0.60	23	0.78				
	10	72	1.40	14	1.80				
	11	72	7.00	4	2.00				
	1	73	4.90	6	4.20				
	2	73	7.40	10	6.40				
	3	73	4.90	10	5.40	31	2.90		
	4	73	5.10	14	2.90	28	6.40		
	5	73	3.40	20	2.50				
	6	73	1.50	30	2.90				
	7	73	1.60	18	1.10	28	0.80		
	8	73	0.90	25	0.60	26	0.60		
	9	73	0.80	22	0.90				
	10	73	0.70	6	0.80				
0901ZZ	8	72	49.00	19	45.00				
	9	72	49.00	23	64.00				
	10	72	74.00	14	94.00				
	11	72	319.00	4	91.00				
	12	72	418.00	2	383.00				
	1	73	270.00	6	236.00				
	2	73	400.00	10	352.00				
	3	73	270.00	10	289.00	31	153.00		
	4	73	276.00	1	159.00	14	278.00	28	347.00
	5	73	183.00	20	142.00				
	6	73	94.00	30	184.00				
	7	73	105.00	18	69.00	28	50.00		
	8	73	58.00	25	40.00	26	37.00		
	9	73	55.00	22	59.00				
	10	73	45.00	6	52.00				

APPENDIX B

PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 74/11/26

090101
41 37 37.0 072 58 41.0
ASPINOOK LAKE
09023 CONNECTICUT

11EPALES
3

2111202
0008 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00630 NO2&NO3 N-TOTAL MG/L	00610 NH3-N TOTAL MG/L	00665 PHOS-TOT MG/L P	00666 PHOS-DIS MG/L P
72/05/29	11 30	0000	19.6	9.3	48	115	7.00	11	0.420	0.080	0.099	0.043
	11 30	0005	18.3	9.2		118	6.90	11	0.440	0.110	0.092	0.043
72/08/04	10 15	0000			30	108	6.85	19	0.490	0.130	0.085	0.055
	10 15	0005	22.9	8.2		105	6.80	20	0.480	0.090	0.085	0.046
72/10/06	17 30	0000			30	160	8.00					
	17 30	0004	16.0	13.0		153	8.70					
	17 30	0012	15.2	9.4		153	7.35					
72/10/08	17 45	0000	16.0	9.0	12	120	7.05	16	0.430	0.160	0.121	0.080

20

DATE FROM TO	TIME OF DAY	DEPTH FEET	32217 CHLRPHYL A UG/L
72/05/29	11 30	0000	13.9J
72/08/04	10 15	0000	62.3J
72/10/06	17 30	0000	40.3J
72/10/08	17 45	0000	21.4J

J VALUE KNOWN TO BE IN ERROR

STORET RETRIEVAL DATE 74/11/26

090102
41 36 45.0 071 59 00.0
ASPINOOK POND
09011 CONNECTICUT

11EPALES
4

2111202
0017 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00630 NO2&NO3 N-TOTAL MG/L	00610 NH3-N TOTAL MG/L	00665 PHOS-TOT MG/L P	00666 PHOS-DIS MG/L P
72/08/04	10 30	0000			36							
	10 30	0005	23.0	8.6		115	6.80	21	0.390	0.100	0.133	0.048
	10 30	0010	22.8	6.4		110	6.65	20	0.470	0.160	0.088	0.056
	10 30	0014	22.8	6.8		105	6.70	21	0.460	0.220	0.092	0.056
									0.470	0.200	0.097	0.053

21
A

DATE FROM TO	TIME OF DAY	DEPTH FEET	32217 CHLRPHYL A UG/L
72/08/04	10 30	0000	41.2J

J VALUE KNOWN TO BE IN ERROR

APPENDIX C

TRIBUTARY and WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 74/11/26

0901A1 LS0901A1
41 35 30.0 071 59 00.0
QUINNEBAUG RIVER
09023 705 TEWETT CITY
O/ASPINOOK POND
CT TURNPIKE BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19			0.210	1.300	0.076	0.064	0.180
72/09/23	10 30		0.431	1.300	0.154	0.074	0.160
72/10/14	10 40		0.480	0.750	0.180	0.048	0.100
72/11/04	10 30		0.540	0.600	0.190	0.064	0.130
72/12/02	11 10		0.390	0.520	0.041	0.021	0.063
73/01/06	09 50		0.480	0.390	0.050	0.016	0.040
73/02/10	10 45		0.430	0.460	0.058	0.017	0.045
73/03/10	10 30		0.470	0.580	0.075	0.028	0.067
73/04/01	10 15		0.480	1.680	0.080	0.030	0.070
73/04/14	09 55		0.380	1.400	0.132	0.023	0.055
73/04/28	10 05		0.357	1.000	0.098	0.034	0.100
73/05/20	09 50		0.420	1.050	0.140	0.046	0.110
73/06/30	11 15		0.510	1.100	0.110	0.080	0.175
73/07/28	09 30		0.310	1.890	0.110	0.054	0.135
73/08/26	11 10		0.065	1.320	0.079	0.044	0.150
73/09/23	10 15		0.220	1.260	0.071	0.056	0.170
73/10/06	10 15		0.280	1.320	0.026	0.039	0.155

STORET RETRIEVAL DATE 74/11/26

0901A2 LS0901A2
41 39 00.0 071 58 30.0
QUINNEBAUG RIVER
09 7.5 PLAINFIELD
I/ASPINOOK POND
PACKER RIDGE RD
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	11 35		0.300	2.600	0.100	0.066	0.210
72/09/23	10 10		0.550	1.300	0.123	0.092	0.176
72/10/14	10 15		0.430	0.700	0.138	0.054	0.098
72/11/04	09 05		0.480	0.690	0.210	0.079	0.147
72/12/02	11 40		0.450	1.260	0.080	0.022	0.067
73/01/06	10 36		0.470	0.660	0.075	0.017	0.045
73/02/10	11 20		0.470	1.500	0.070	0.017	0.040
73/03/10	10 35		0.440	0.480	0.063	0.028	0.080
73/03/31	10 45		0.490	1.050	0.100	0.032	0.240
73/04/14	10 20		0.390	1.540	0.082	0.023	0.060
73/04/28	11 10		0.330	0.740	0.078	0.035	0.110
73/05/20	09 35		0.430	0.690	0.062	0.050	0.100
73/06/30	11 15		0.530	1.600	0.138	0.087	0.180
73/07/28	10 00		0.470	0.850	0.023	0.071	0.135
73/08/25	11 30		0.019	1.470	0.048	0.075	0.210
73/09/22	09 15		0.400	1.200	0.050	0.079	0.180
73/10/06	10 45		0.430	1.600	0.029	0.096	0.175

STORET RETRIEVAL DATE 74/11/26

0901A3 LS0901A3
41 43 00.0 071 58 00.0
QUINNEBAUG RIVER
09 7.5 PLAINFIELS
I/ASPINOOK POND
ST HWY 15 BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	11 10		0.377	2.400	0.087	0.095	0.210
72/09/23	09 50		0.490	0.950	0.131	0.085	0.176
72/10/14	09 45		0.360	0.675	0.225	0.051	0.090
72/11/04	08 45		0.410	0.650	0.170	0.067	0.138
72/12/02	11 10		0.399		0.054	0.020	0.066
73/01/06	10 20		0.450	0.440	0.065	0.016	0.040
73/02/10	11 05		0.430	0.630	0.072	0.016	0.040
73/03/10	10 00		0.420	0.730	0.063	0.029	0.080
73/03/31	10 15		0.430	1.150		0.038	0.075
73/04/14	09 20		0.360	1.600	0.078	0.026	0.060
73/04/28	09 45		0.330	1.200	0.126	0.034	0.105
73/05/20	09 15		0.399	1.050	0.092	0.052	0.100
73/06/30	11 00		0.510	1.200	0.099	0.080	0.195
73/07/28	09 30		0.480	1.500	0.330	0.093	0.160
73/08/26	09 45		0.065	1.400	0.038	0.088	0.200
73/09/22	09 00		0.460	1.200	0.069	0.099	0.200
73/10/08	10 00		0.370	1.470	0.060	0.110	0.190

STORET RETRIEVAL DATE 74/11/26

0901A4 LS0901A4
41 47 00.0 071 53 30.0
QUINNEBAUG RIVER
09 7.5 DANIELSON
I/ASPINOOK POND
DIRT RD BELOW DANIELSON STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	10 15		0.380	1.890	0.126	0.140	0.294
72/09/23	09 10		0.490	1.000	0.199	0.105	0.210
72/11/04	09 40		0.380	0.900	0.270	0.105	0.200
72/12/07	10 00		0.380		0.110	0.036	
73/01/06	09 15		0.430	0.880	0.115	0.022	0.045
73/02/10	09 35		0.400	0.740	0.096	0.023	0.050
73/03/10	09 45		0.400	0.920	0.096	0.034	0.085
73/04/01	09 15		0.420	1.470	0.110	0.046	0.095
73/04/14	08 45		0.340	1.150	0.082	0.031	0.065
73/04/28	09 15		0.300	0.840	0.120	0.042	0.110
73/05/20	09 00		0.360	1.300	0.126	0.060	0.125
73/06/30	10 30		0.490	0.960	0.360	0.092	0.188
73/07/28	08 40		0.510	1.000	0.130	0.120	0.210
73/08/26	10 25		0.080	1.540	0.069	0.120	0.280
73/09/22	08 45		0.470	1.200	0.190	0.132	0.250
73/10/07			0.320	2.000	0.290	0.160	0.280

STORET RETRIEVAL DATE 74/11/26

0901A5 LS0901A5
41 48 00.0 071 53 30.9
QUINNEBAUG RIVER
09 7.5 DANIELSON
1/ASPINOOK POND
US 6 BRDG BELOW DANIELSON STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	09 45		0.300	2.520	0.450	0.126	0.340
72/09/23	08 30		0.482	1.250	0.154	0.105	0.220
72/10/14	09 30		0.380	0.900	0.200	0.075	0.147
72/11/04	09 18		0.410	0.900	0.294	0.115	0.220
72/12/02	09 55		0.399	0.540	0.080	0.032	0.075
73/01/06	09 05		0.430	0.440	0.066	0.021	0.050
73/02/10	09 30		0.410	0.400	0.083	0.024	0.055
73/03/10	09 25		0.410	0.500	0.075	0.034	0.085
73/04/01	08 25		0.390	2.100	0.110	0.044	0.100
73/04/14	08 10		0.340	1.000	0.076	0.034	0.072
73/04/28	08 45		0.336	1.300	0.290	0.056	0.175
73/05/20	08 10		0.340	0.940	0.078	0.063	0.130
73/06/30	09 30		0.530	1.050	0.138	0.100	0.190
73/07/28	07 55		0.520	1.320	0.190	0.120	0.200
73/08/26	10 10		0.010K	1.380	0.026	0.130	0.290
73/09/22	08 00		0.480	1.180	0.087	0.120	0.250
73/10/06	08 50		0.336	1.900	0.040	0.110	0.240

>27

K VALUE
LESS THAN

STORET RETRIEVAL DATE 74/11/26

0901A6 LS090146
41 53 30.0 071 54 00.0
QUINNEBAUG RIVER
09 7.5 PUTNAM
O/ASPINOOK POND
0.75 MI BELOW STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	14 15		0.443	1.000	0.078	0.174	0.340
72/09/09	09 30		0.447	1.050	0.093	0.064	0.198
72/10/14	09 45		0.310	1.100	0.154	0.063	0.147
72/11/11	08 50		0.330	1.100	0.220	0.046	0.147
72/12/09	09 00		0.350	0.520	0.046	0.021	0.067
73/01/13	09 00		0.530	2.000	0.160	0.031	0.085
73/02/03	08 30		0.420	0.890	0.132	0.032	0.145
73/03/24	08 45		0.360	0.580	0.046	0.013	0.060
73/04/14	08 30		0.273	0.450	0.048	0.026	0.070
73/05/06	09 00		0.330	0.630	0.290	0.058	0.125
73/06/03	09 00		0.231	0.880	0.036	0.048	0.145
73/07/14	08 30		0.480	2.100	0.252	0.074	0.170
73/08/19	12 00		0.390	0.760	0.040	0.120	0.250
73/09/15	10 00		0.300	1.200	0.052	0.076	0.235
73/10/14	09 15		0.440	1.350	0.115	0.120	0.230

STORET RETRIEVAL DATE 74/11/26

0901A7 LS0901A7
41 54 30.0 071 55 00.0
QUINNEBAUG RIVER
09 7.5 PUTNAM
O/ASPINOOK POND
GAGING STA ABOVE PUTNAM STP
11EPALES 21;1204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	14 45		0.420	2.500	0.139	0.210	0.410
72/09/09	09 00		0.507	1.350	0.215	0.084	0.240
72/11/11	08 30		0.316	1.280	0.200	0.047	0.160
72/12/09	08 45		0.294	0.520	0.048	0.023	0.069
73/01/13	09 30		0.460	1.300	0.176	0.037	0.095
73/02/03	09 00		0.336	0.900	0.110	0.036	0.140
73/03/24	09 15		0.300	0.780	0.049	0.017	0.070
73/04/14	09 00		0.240	0.440	0.054	0.027	0.070
73/05/06	08 30		0.280	0.740	0.400	0.068	0.135
73/06/03	09 30		0.189	0.960	0.052	0.060	0.165
73/07/14	09 00		0.470	0.960	0.140	0.095	0.195
73/08/19	12 30		0.470	0.920	0.044	0.132	0.270
73/09/15	10 30		0.294	1.380	0.069	0.092	0.280
73/10/14	09 00		0.420	1.600	0.120	0.132	0.260

STORET RETRIEVAL DATE 74/11/26

0901AR LS0901AR
41 55 30.0 071 54 30.0
QUINNEBAUG RIVER
09 7.5 PUTNAM
O/ASPINOOK POND
W THOMPSON RD BRDG BELOW THOMPSON STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO3&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	15 00		0.350	2.200	0.180	0.220	0.420
72/09/09	09 50		0.390	1.600	0.172	0.084	0.252
72/10/14	10 10		0.310	1.000	0.231	0.075	0.174
73/01/13	10 00		0.430	0.880	0.140	0.038	0.095
73/02/03	09 30		0.336	1.300	0.150	0.032	0.125
73/03/24	09 45		0.290	0.580	0.044	0.023	0.075
73/04/14	09 10		0.230	0.460	0.058	0.028	0.075
73/05/06	09 30		0.252	0.630	0.330	0.064	0.140
73/06/03	10 00		0.168	1.100	0.046	0.060	0.165
73/07/14	09 30		0.550	2.600	0.046	0.091	0.200
73/08/19	13 00		0.470	1.980	0.094	0.150	0.300
73/09/15	11 00		0.330	1.500	0.068	0.100	0.290
73/10/14	09 45		0.380	1.900	0.147	0.147	0.280

STORET RETRIEVAL DATE 74/11/26

090149 LS090149
41 56 30.0 071 54 00.0
QUINNEBAUG RIVER
09 7.5 PUTNAM
O/ASPINOOK POND
100 YDS ABOVE THOMPSON STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	15 15		0.377	2.300	0.445	0.384	0.600
72/09/09			0.390	1.650	0.164	0.096	0.294
72/10/14	10 40		0.290	1.050	0.230	0.100	0.210
72/11/11	09 45		0.310	1.250	0.168	0.046	0.160
72/12/09	09 45		0.300	0.660	0.055	0.022	0.075
73/01/13	10 30		0.470	1.150	0.126	0.050	0.118
73/02/03	10 00		0.336	0.795	0.110	0.035	0.125
73/03/24	10 15		0.357	0.950	0.058	0.030	0.090
73/04/14	10 00		0.260	0.790	0.060	0.037	0.115
73/05/06	10 00		1.240	0.800	0.440	0.090	0.165
73/06/03	10 30		0.220	1.300	0.105	0.088	0.220
73/07/14	10 00		0.480	1.300	0.294	0.120	0.240
73/08/19	13 30		0.530	1.150	0.110	0.198	0.345
73/09/15	11 30		0.530	1.800	0.080	0.180	0.370
73/10/14	10 15		0.450	1.900	0.210	0.200	0.330

STORET RETRIEVAL DATE 74/11/26

090181 LS090181
41 38 30.0 071 59 30.0
CORY BROOK
09 7.5 PLAINFIELD
T/ASPINOOK POND
GEN PUTNAM HWY BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	11 45		0.480	0.950	0.069	0.009	0.023
72/09/23	10 15		0.385	0.750	0.097	0.010	0.029
72/10/14	10 05		0.250	1.100	0.100	0.008	0.022
72/11/04	09 15		0.190	0.450	0.081	0.008	0.020
72/12/02	11 35		0.380	0.620	0.049	0.007	0.010
73/01/06	10 30		0.570	0.300	0.042	0.005K	0.010
73/02/10	11 15		0.580	0.580	0.054	0.005K	0.010
73/03/10	10 20		0.420	0.660	0.027	0.006	0.015
73/03/31	10 35		0.430	0.720	0.073	0.012	0.020
73/04/14	10 15		0.380	1.300	0.063	0.007	0.020
73/04/28	10 00		0.210	1.000	0.050	0.010	0.030
73/05/20	09 30		0.310	1.100	0.052	0.013	0.025
73/06/30	13 30		0.290	2.100	0.470	0.110	0.230
73/07/28	09 30		0.530	0.800	0.063	0.027	0.055
73/08/25	11 15		0.480	0.870	0.048	0.022	0.025
73/09/22	09 30		0.410	0.780	0.052	0.023	0.040
[illegible]/06	10 30		0.336	2.000	0.097	0.016	0.030

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K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

0901C1 LS0901C1
41 39 30.0 071 58 30.0
CONE BROOK
09 7.5 PLAINFIELD
T/ASPINOOK POND
GEN PUTNAM HWY BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	11 25		0.397	1.380	0.109	0.011	0.036
72/09/23	10 05		0.407	0.600	0.350	0.011	0.037
72/10/14	10 00		0.240	0.250	0.088	0.005K	0.014
72/11/04	08 55		0.230	0.300	0.078	0.005K	0.019
72/12/02	11 25		0.350	2.200	0.315	0.005K	0.013
73/01/06	10 29		0.430	0.500	0.042	0.008	0.035
73/02/10	11 10		0.420	0.370	0.029	0.005K	0.010
73/03/10	10 10		0.399	0.250	0.026	0.005K	0.010
73/03/31	10 25		0.357	1.100	0.052	0.005K	0.015
73/04/14	10 35		0.336	0.630	0.042	0.005K	0.010
73/04/28	10 00		0.190	0.700	0.029	0.005K	0.020
73/05/20	09 00		0.260	0.460	0.048	0.008	0.020
73/06/30	11 10		0.210	2.660	0.210	0.023	0.175
73/07/18	09 40		0.470	0.690	0.054	0.013	0.055
73/08/25	11 00		0.390	0.710	0.040	0.009	0.045
73/09/22	09 15		0.460	1.200	0.056	0.015	0.105
73/10/06	10 15		0.330	1.470	0.038	0.008	0.075

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

0901D1 LS0901D1
41 48 00.0 071 53 30.0
OUTLET OF FIVE MILE POND
09 7.5 DANIELSON
T/ASPINOOK POND
US 6 BRDG ABOVE DANIELSON STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19			0.525	0.660	0.083	0.040	0.069
72/09/23	08 40		0.390	0.550	0.154	0.039	0.068
72/10/14	09 25		0.230	0.500	0.120	0.015	0.029
72/11/04	09 15		0.290	1.300	0.085	0.014	0.038
72/12/02	09 50		0.240	0.270	0.040	0.006	0.016
73/01/06	09 00		0.330	1.150	0.075	0.010	0.035
73/02/10	09 25		0.280	0.345	0.037	0.006	0.020
73/03/10	09 25		0.270	0.780	0.025	0.011	0.030
73/04/01	08 15		0.300	1.050	0.050	0.043	0.060
73/04/14	08 00		0.231	0.720	0.053	0.011	0.030
73/04/28	08 40		0.190	0.580	0.063	0.010	0.035
73/05/20	08 05		0.252	0.610	0.044	0.013	0.035
73/06/30			0.350	1.380	0.180	0.030	0.075
73/07/28	07 50		0.340	1.050	0.072	0.030	0.055
73/08/26	10 05		0.280	0.360	0.036	0.028	0.070
73/09/27	07 45		0.240	0.500	0.058	0.030	0.065
73/10/06	08 40		0.400	0.880	0.050	0.024	0.055

STORET RETRIEVAL DATE 74/11/26

0901E1 LS0901E1
41 43 00.0 071 55 30.0
MOOSUP RIVER
09 7.5 PLAINFIELD
T/ASPINOOK POND
ST HWY 14 BRDG BELOW PLAINFIELD STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	10 50		0.360	0.710	0.132	0.054	0.056
72/09/23			0.294	0.950	0.199	0.042	0.078
72/11/04	10 04		0.344	0.350	0.140	0.039	0.068
72/12/02	10 45		0.310	0.315	0.046	0.015	0.029
73/01/06	09 28		0.380	0.270	0.126	0.038	0.060
73/02/10	10 10		0.370	0.520	0.189	0.056	0.070
73/03/10	10 05		0.300	1.000	0.138	0.040	0.060
73/04/01	09 45		0.336	1.470	0.399	0.100	0.120
73/04/14	09 15		0.270	1.760	0.140	0.035	0.045
73/04/28	09 40		0.230	0.920	0.050	0.021	0.050
73/05/20	09 20		0.400	0.420	0.029	0.098	0.123
73/06/30	10 50		0.590	3.000	1.600	0.120	0.210
73/07/28	09 00		0.860	1.380	0.093	0.240	0.270
73/08/26	10 45		1.390	0.640	0.049	0.590	0.595
73/09/22	09 30		0.550	0.500	0.042	0.154	0.190
73/10/07			1.060	0.800	0.044	0.450	0.490

STORET RETRIEVAL DATE 74/11/26

0901E2 LS0901E2
41 43 00.0 071 55 00.0
MOOSUP RIVER
09 7.5 PLAINFIELD
T/ASPINOOK POND
ST HWY 14 BRDG ABOVE PLAIN FIELD STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	10 30		0.350	0.540	0.110	0.018	0.039
72/09/23	09 30		0.269	0.550	0.108	0.010	0.021
72/10/14	10 00		0.220	0.550	0.138	0.007	0.020
72/11/04	09 58		0.299	0.350	0.140	0.008	0.024
72/12/02	10 40		0.290	0.340	0.027	0.007	0.015
73/01/06	09 22		0.360	0.300	0.030	0.005K	0.020
73/02/10	10 02		0.340	0.440	0.046	0.005K	0.015
73/03/10	10 00		0.290	0.500	0.031	0.008	0.020
73/04/01	09 30		0.300	1.260	0.056	0.008	0.020
73/04/14	09 00		0.230	0.690	0.038	0.007	0.020
73/04/28	09 35		0.200	0.630	0.039	0.008	0.035
73/05/20	09 15		0.200	0.640	0.050	0.010	0.020
73/06/30	10 45		0.315	2.600	0.273	0.022	0.090
73/07/28	08 55		0.270	0.950	0.060	0.017	0.020
73/08/26	10 40		0.220	0.400	0.046	0.016	0.035
73/09/22	09 15		0.180		0.058	0.013	0.030
73/10/06	09 15		0.147	0.500	0.016	0.005K	0.025

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

0901F1 LS0901F1
41 40 00.0 071 55 00.0
MILL BROOK
09 7.5 PLAINFIELD
T/ASPINOOK POND
ST HWY 12 BRDG ABOVE PLAINFIELD STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	12 40		0.360	1.050	0.098	0.008	0.022
72/09/23	10 55		0.249	0.550	0.079	0.008	0.020
72/10/14	10 35		0.143	0.350	0.065	0.005K	0.013
72/11/04	09 30		0.104	0.370	0.060	0.005K	0.015
72/12/02	12 05		0.200	0.320	0.025	0.005K	0.007
73/01/06	10 55		0.320	0.120	0.011	0.005K	0.010
73/02/10	11 35		0.330	0.330	0.039	0.005K	0.010
73/03/10	10 55		0.270	1.000	0.030	0.005K	0.010
73/03/31	11 10		0.270	0.820	0.042	0.005K	0.010
73/04/14	11 00		0.200	0.480	0.025	0.005K	0.010
73/04/28	10 30		0.115	0.690	0.037	0.005K	0.020
73/05/20	10 15		0.160	0.370	0.042	0.011	0.020
73/06/30	12 10		0.147	2.600	0.280	0.023	0.060
73/07/28	10 25		0.252	1.260	0.097	0.019	0.035
73/08/25	11 00		0.250	0.630	0.040	0.021	0.035
73/09/22	10 15		0.280	0.750	0.042	0.031	0.040

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

0901G1 LS0901G1
41 40 30.0 071 55 00.0
OUTLET OF EVANS POND
09 7.5 PLAINFIELD
T/ASPINOOK POND
ST HWY 12 CROSSING
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	12 45		0.273	1.300	0.110	0.015	0.030
72/09/23	11 00		0.297	0.800	0.087	0.017	0.034
72/10/14	10 40		0.273	0.750	0.160	0.005K	0.020
72/11/04	09 40		0.290	0.600	0.138	0.005K	0.042
72/12/02	12 15		0.610	0.250	0.035	0.005K	0.009
73/01/06	11 00		0.915	0.130	0.024	0.005K	0.015
73/02/10	11 36		0.880	0.240	0.038	0.005K	0.010
73/03/10	11 07		0.650	0.250	0.028	0.005K	0.010
73/03/31	11 20		0.580	0.960	0.052	0.005K	0.010
73/04/14	09 30		0.580	0.560	0.048	0.006	0.010
73/04/28	10 45		0.336	0.710	0.039	0.005K	0.015
73/05/20	09 55		0.340	0.790	0.078	0.014	0.035
73/06/30	12 30		0.252	1.540	0.378	0.017	0.050
73/07/28	11 00		0.260	1.440	0.098	0.019	0.070
73/08/25	12 15		0.240	1.260	0.210	0.012	0.050
73/09/27	10 30		0.189	0.480	0.054	0.009	0.025
73/10/06	11 30		0.120	1.500	0.067	0.008	0.070

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

0901H1 LS0901H1
41 40 00.0 071 57 00.0
OUTLET OF PACKERS POND
09 7.5 PLAINFIELD
T/ASPINOOK POND
PACKERS RD XING BELOW PLAINFIELD STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	12 15		0.720	2.310	0.200	0.168	0.300
72/09/23	10 50		0.299	1.380	0.107	0.168	0.320
72/10/14	10 20		0.600	1.650	0.210	0.110	0.231
72/11/04	09 25		0.330	0.700	0.094	0.069	0.147
72/12/02	11 45		0.450	0.370	0.060	0.060	0.080
73/01/06	10 35		1.040	0.390	0.069	0.040	0.060
73/02/10	11 30		1.200	0.520	0.100	0.075	0.105
73/03/10	10 45		0.740	0.540	0.063	0.105	0.140
73/03/31	11 00		0.940	1.320	0.054	0.075	0.130
73/04/14	10 45		0.610		0.120	0.042	0.090
73/04/28	10 15		0.340	1.050	0.138	0.052	0.090
73/05/20	09 45		0.740	0.960	0.240	0.075	0.135
73/06/30	12 00		0.330	2.600	0.680	0.160	0.260
73/07/28	10 10		2.900	4.600	0.710	0.480	0.720
73/08/25	11 45		1.720	1.470	0.094	0.132	0.330
73/09/22	10 00		6.000	0.440	0.176	0.063	0.110
73/10/06	11 00		9.600	0.933	0.250	0.097	0.157

STORET RETRIEVAL DATE 74/11/27

090150 PR090150 P005000
41 47 30.0 071 53 30.0
DANIELSON (KILLINGLY)
09011 7.5 DANIELSON
T/ASPINOOK POND
QUINEBAUG RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/01/26	08 00								
CP(T)-			1.890	17.800	4.200	3.000	6.700	1.030	1.270
73/01/26	16 00								
73/02/23	08 00								
CP(T)-			1.700	17.000	4.900	4.300	8.700	1.100	1.180
73/02/23	15 00								
73/03/22	08 00								
CP(T)-			1.580	22.000	6.500	3.000	6.800	0.790	0.795
73/03/22	16 00								
73/04/12	08 00								
CP(T)-			1.890	17.000	3.700	2.600	6.800	1.040	0.835
73/04/12	16 00								
73/05/15	08 00								
CP(T)-			1.435	22.000	7.300	3.100	6.700	0.950	0.886
73/05/15	16 00								
73/06/12	08 00								
CP(T)-			1.720	19.000	4.400	2.800	6.500	0.695	0.875
73/06/12	16 00								
73/07/10	08 00								
CP(T)-			0.920	32.000	8.600	4.400	10.500	0.452	0.550
73/07/10	16 00								
73/08/09			0.170	25.600	5.000	1.600	11.500	0.450	0.417
73/09/14	08 00								
CP(T)-			0.440	28.000	18.000	6.440	9.000	0.500	0.450
73/09/14	16 00								
73/10/18	08 00		0.034	49.000	28.000	7.800	9.400	0.525	0.325
73/11/20	08 00								
CP(T)-			0.010K	36.000	21.000	7.200	8.750	0.300	0.320
73/11/20	16 00								
73/12/12	08 00								
CP(T)-			0.280	29.000	12.600	6.800	11.500	0.372	0.302
73/12/12	16 00								
74/01/08	08 00								
CP(T)-			2.000	18.000	5.400	2.760	4.500	0.850	0.700
74/01/08	16 00								

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/27

090151 AS090151 P001500
41 40 00.0 071 56 00.0
PLAINFIELD
09 7.5 PLAINFIELD
T/ASPINOOK POND
QUINEBAUG RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/01/30 CP(T)-	07 00		1.100	6.500	0.945	1.500	2.000	0.425	0.625
73/01/30	15 30		2.300	10.000	2.400	1.300	2.600	0.239	0.300
73/03/02	08 00		0.030	21.000	5.100	1.640	4.100	0.400	0.397
73/04/02	10 00		0.960	3.325		4.900	5.900	0.385	0.380
73/05/01	08 00		0.340	10.000	3.100	3.900	5.750	0.377	0.350
73/06/01	10 30		13.200	6.040	1.680	4.580	9.600	0.140	0.250
73/07/04	09 30		0.170	5.400	0.710	5.200	6.210	0.316	0.312
73/07/31	08 00		0.126	17.000			8.400	0.268	0.302
73/09/05	10 30		5.000	2.900	0.120	0.640	1.030	0.227	0.259
73/10/01	10 30		13.000	9.300	3.200	2.800	4.700	0.275	0.261
73/11/01	10 45		3.400	25.000	15.000	4.700	5.700	0.190	0.205
73/12/03	08 30		9.100	2.300	0.360	2.080	2.500	0.475	0.413
74/01/05	11 15								

STORET RETRIEVAL DATE 74/11/27

090152 AS090152 P002500
41 43 00.0 071 55 00.0
PLAINFIELD NORTH
09 7.5 PLAINFIELD
T/ASPINOOK POND
QUINEBAUG RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/02/01	09 30								
CP(T)-			0.690	18.000	9.400	5.450	6.000	0.275	0.300
73/02/01	15 30								
73/03/02	11 15						8.900	0.280	0.286
73/04/02	14 00		10.600	3.230	2.100	6.750	6.900	0.301	0.302
73/05/01	10 00		15.600	1.470	0.168	7.800	7.800	0.376	0.375
73/05/31	08 00		23.000	13.200	3.400	9.800	11.000	0.354	0.350
73/07/03	15 15		18.400	6.100	3.500			0.345	0.318
73/07/31	09 00		1.700	0.680	0.053	0.010	0.025	0.322	0.314
73/09/04	08 00			3.400			9.700	0.350	0.400
73/10/01	08 00		20.000	2.700	0.195	9.500	9.500	0.400	0.419
73/11/01	08 30		23.000	1.500	1.490	8.600	9.000	0.663	0.487
73/12/03	08 00		23.000	3.300	1.260	8.700	9.500	0.387	0.500
74/01/05	09 30		18.000	2.150	0.200	6.160	7.150	0.470	0.562

STORET RETRIEVAL DATE 74/11/27

090153 AS090153 P007000
41 54 30.0 071 54 30.0
PUTNAM
09 7.5 PUTNAM
T/ASPINOOK POND
QUINEBAUG RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
72/12/28	08 00								
CP(T)-			5.480	4.000	2.000	3.475	4.000	2.000	2.000
72/12/28	16 00								
73/01/27	08 00								
CP(T)-			0.840	12.600	7.700	3.800	4.700	2.160	2.500
73/01/27	16 00								
73/02/27	08 00								
CP(T)-			0.090	11.500	7.140	3.650	4.200	1.750	
73/02/27	16 00								
73/03/30	12 00								
CP(T)-			0.085	17.400	9.600	2.850	3.200	1.500	1.500
73/03/30	20 00								
73/05/23	12 00								
CP(T)-			1.890	6.200	2.200	4.300	4.600	1.750	1.750
73/05/23	20 00								
73/06/27	08 00								
CP(T)-			0.240	16.700	11.400	5.600	6.000	2.000	1.750
73/06/27	16 00								
73/07/27	12 00								
CP(T)-			0.160	17.600	5.800	4.600	6.100		1.750
73/07/27	20 00								
73/08/30	08 00								
CP(T)-				12.600	7.100	6.300	7.100	1.500	1.750
73/08/30	16 00								
73/09/26	12 00								
CP(T)-			0.120	23.000	17.000	7.200	7.200	2.000	1.750
73/09/26	20 00								
73/10/30	08 00								
CP(T)-				4.400	0.140	6.800	7.150	2.000	1.750
73/10/30	16 00								
73/11/30	12 00								
CP(T)-			0.030	23.000	17.000	8.400	8.500	2.000	1.750
73/11/30	20 00								
73/12/26	08 00								
CP(T)-			1.500	12.000	7.100	4.100	4.800	2.000	1.750
73/12/26	16 00								